

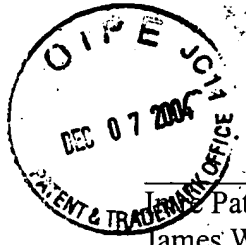
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Docket No.: 01313/100E290-US2  
(PATENT)

CUSTOMER NO.: 07278



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Patent Application of:  
James WESTPHAL et al.

Application No.: 09/719,338

Art Unit: 3761

Filed: January 17, 2001

Examiner: Catherine L. Anderson

For: UNITARY ABSORBENT STRUCTURE  
CONTAINING SUPERABSORBENT  
POLYMER

**APPEAL BRIEF**

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Appellants submit this Appeal Brief in triplicate pursuant to the provisions of 37 C.F.R. §1.192. A check in the amount of \$340.00 for the required fee pursuant to 1.17(c) for filing this Appeal Brief is enclosed. A Notice of Appeal was timely filed on September 7, 2004. A one month extension of time and the requisite fee of \$110.00 are also enclosed herewith.

12/09/2004 HALI11 00000011 09719338  
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**(1) Real Party in Interest**

The real party in interest is the assignee, BKI Holding Corporation (Wilmington, Delaware) of which the sole shareholder is Buckeye Lumberton Inc., which in turn is a wholly owned subsidiary of Buckeye Technologies Inc. (Memphis, Tennessee).

**(2) Related Appeals and Interferences**

Appellants, Appellants' legal representative, and assignee are not, at this time, aware of any related appeals and/or interferences which will directly affect, be directly affected by, or otherwise have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

Claims 1-3 and 5-9, as set forth in the appendix, stand rejected and are on appeal. Claim 4 has been cancelled. The status of each claim has been identified in the listing of claims in the appendix.

**(4) Status of Amendments**

Claims 1-3 and 5-9 were finally rejected under 35 U.S.C. §§ 102(b) and 103(a) in an Office Action dated December 4, 2002, in which the Examiner also rejected the claims under 35 U.S.C. § 112, ¶2. Following a telephone interview with the Examiner, Appellants filed an amendment under 37 C.F.R. § 1.116 on February 27, 2003 amending claims 1 and 8 as agreed upon during the interview and requesting reconsideration of the final rejections. In an Advisory Action dated March 12, 2003, the Examiner indicated that the response did not place the

application in condition for allowance, and stated that for purposes of appeal, the proposed amendments would not be entered. On June 2, 2003, Appellants filed a Request for Continued Examination.

A non-final Office Action was issued August 11, 2003, entering the prior amendments to the claims. Claims 1-3 and 5-9 were rejected under 35 U.S.C. §§ 102(b) and 103(a) over newly cited art. The Examiner also rejected the claims under 35 U.S.C. § 112, ¶2 and objected to the drawings. Appellants filed an amendment, amending claims 1, 5 and 6. Subsequently, claims 1-3 and 5-9 were finally rejected under 35 U.S.C. § 103(a) in an Office Action dated March 4, 2004. Appellants filed a response under 37 C.F.R. § 1.116 on May 4, 2004, requesting reconsideration of the final rejections.

When no advisory action was received after three months, Appellants timely filed a Notice of Appeal on September 7, 2004. In a subsequent Advisory Action dated September 14, 2004, the Examiner indicated that the response did not place the application in condition for allowance. Accordingly, Appellants submit this Appeal Brief and respectfully request reconsideration of the rejections.

#### **(5) Summary of the Invention**

The present invention relates to unified, fibrous absorbent structures containing superabsorbent polymers (SAP) useful in the manufacture of disposable diapers, adult incontinence pads, sanitary napkins and the like (see specification, page 1, lines 11-14).

The claimed invention is specifically directed to an absorbent structure having an upper fibrous layer (acquisition-distribution layer), a lower fibrous liquid storage layer, and a

containment layer. The absorbent structure has a density gradient through the thickness of the structure and has sealed lateral edges to contain loose fibers and particles within the structure (page 4, lines 15-17 and 25-28). See Figure 1 for a cross-section of one embodiment of the claimed absorbent structure:

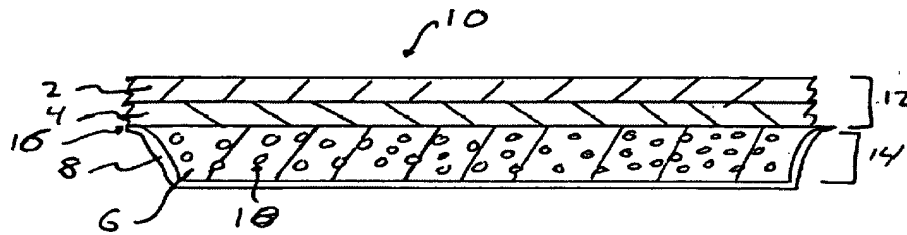


Figure 1

The upper fibrous layer (acquisition-distribution layer) 12 has a liquid acquisition zone 2 containing fibers and a binder resin extending to one surface, and a liquid distribution zone 4 extending to the other surface (page 5, lines 30-38). A lower fibrous liquid storage layer 14 having SAP particles 18 is in liquid communication with the distribution zone surface of the upper layer (page 4, lines 23-26; page 6, lines 31-34). In certain embodiments of the invention, the fibrous layers are airlaid (page 7, line 10). In one embodiment, the airlaid layer may be an airfelt layer (page 5, lines 12-13).

A containment layer 8 surrounds the storage layer and extends to the outer edges of the structure, the containment layer holding the fibers and SAP of the storage layer against the distribution zone surface of the upper layer (page 8, lines 30-36). The containment layer is sealed to at least one edge 16 of the upper fibrous layer (page 5, lines 22-24). In one embodiment of the invention, the containment layer is sealed directly to the distribution zone surface of the upper fibrous layer. In another embodiment of the invention, the containment layer is sealed directly to

the storage layer (page 9, lines 5-22). The containment layer may be selected from a variety of materials including thermoplastic film, nonwoven, or woven tissue (page 9, lines 1-2).

The absorbent structure advantageously facilitates fluid transport from an acquisition zone to the storage zone by way of the density gradient; exhibits superior particle containment at high particle loading with the containment layer sealing; is thin with high absorbent capacity; and can be delivered in roll-goods form to simplify manufacturing and converting processes (page 3, lines 26-31).

**(6) Issues**

(1) Whether claims 1-2 and 5-8 are unpatentable under 35 U.S.C. 103(a) over U.S. Patent No. 5,879,344 (to Koczab) in view of U.S. Patent No. 5,476,459 (to Yang).

(2) Whether claims 3 and 9 are unpatentable under 35 U.S.C. 103(a) over Koczab in view of Yang and Statutory Invention Registration (SIR) No. H1657 (to Hammons).

**(7) Grouping of Claims**

Claim 1-3 and 5-9 stand or fall together.

**(8) Argument****A. Koczab, in view of Yang, does not render claims 1-2 and 5-8 obvious.**

In the Office Action of March 4, 2004, the Examiner maintained the final rejection of claims 1-2 and 5-8 under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 5,879,344 (to Koczab) in view of U.S. Patent No. 5,476,459 (to Yang). Regarding claim 1, the Examiner erroneously asserted that Koczab disclosed all aspects of the invention except the presence of binder resin in the acquisition zone, and that Yang provided the teaching of a binder resin in an acquisition zone (page 2, March 4, 2004 Office Action). According to the Examiner, based on these references, it would have been obvious to one of ordinary skill in the art to arrive at the presently claimed invention. Koczab and Yang are discussed in more detail below.

Koczab discloses a composite nonwoven material for use in absorbent articles as surface webs or "region strips" (4:59-62). The material has a first layer of nonwoven material and a second sheet layer of carded-type fibers which is bonded to the first layer by a needling technique (3:57-63). The first layer is made of natural or synthetic fibers of various denier, with a basis weight (weight per unit area) of between 10 and 30 g/m<sup>2</sup> (4:9-10). The second sheet is made of synthetic textile fibers with a basis weight of between 20 and 60 g/m<sup>2</sup> (4:25-27). Optionally, the material may include a second nonwoven layer needled to the opposite side of the carded sheet with a basis weight less than 20 g/m<sup>2</sup> (4:53-55).

The absorbent articles of Koczab contain a surface web, an absorbent pad of narrower width, and an outer liquid impervious layer (4:65-5:3). The surface web and the outer impervious layer are bonded to the absorbent pad by adhesive bonding (5:3-7). The absorbent article may additionally have a region strip made of the nonwoven materials (of similar width to the

absorbent pad) placed above the surface web or between the surface web and absorbent pad (5:19-27). The liquid impervious layer is attached to the surface web by means of adhesive bonding (5:37).

Koczab does not disclose binder resin in an acquisition layer, either expressly or inherently. The Examiner acknowledged this fact on page 2 of the March 4, 2004 Final Office Action, stating that “Koczab ... remains silent as to the presence of a binder resin.”

The second reference relied upon by the Examiner is Yang, which discloses a disposable urine and fecal waste containment product. Yang teaches a urinary pad having a foam shell backing, an absorbent core pleated in M-configuration, and a hydrophobic fibrous facing (10:54-61). The Examiner has relied on Yang to provide the teaching of the binder resin in the acquisition layer absent in Koczab. Specifically, the Examiner erroneously stated on page 2 of the Final Office Action that “Yang discloses an upper fibrous acquisition zone 73, as shown in figure 7, comprising polyester fibers and a binder resin, as described in column 11, lines 8-17.”

Yang discloses that the absorbent core has an absorbent medium of fibers and superabsorbent materials deposited onto a tissue layer and is faced with a transfer layer (11:3-7). The transfer layer is made of synthetic fusible fibers, specifically naming resin bonded polyester fabrics (11:11-12). Yang further describes the transfer layer in column 11, lines 31-38, stating that the transfer layer conducts fluid to the bottom of the open channel formed by the M-folding of the core. “In forming the M-fold, a channel 74 is created in approximately the center of the pad in a lengthwise direction which serves [sic] to hold discharge until absorbed by the absorbent core.” (11:31-33).

It is clear from the specification that the transfer layer of Yang is not an equivalent to the acquisition layer of the claimed invention. The acquisition layer must be one which is capable of rapidly acquiring liquid from insult, which then passes to a distribution layer (see subject specification, page 4, lines 20-26). The distribution layer then laterally distributes the acquired liquid to be absorbed and stored across the storage layer (page 4, lines 21-26). The two separate and distinct acquisition and distribution layers work together to provide an unexpected advantage over the prior art of transporting liquid not only across the layers but also laterally distributing the liquid across the storage layer.

Based on the teaching of Yang, there are only two possibilities for a so-called acquisition layer. One possibility for an acquisition layer would lie in the noted nonwoven facing fabric (64) of Figure 7 (11:42). This facing layer receives the initial insult and either passes the fluid to the transfer layer or an open channel. The second possibility for an acquisition layer lies in the open channel 74 of Figure 7 which “holds” the discharge until absorbed by the transfer layer (11:31-33). However, neither the facing layer nor the open channel teach the presence of any binder resin.

The transfer layer in Yang does not hold any insult, but rather distributes the liquid across the absorbent core. While the transfer layer contains binder resin, at best, it would constitute a distribution layer of the present invention. Therefore, the Examiner has mischaracterized the role of the transfer layer. Accordingly, Yang does not provide the missing teaching of an acquisition layer with binder resin.

Even if Yang is taken only to imply that a binder resin had been employed previously in a fibrous layer, this teaching would not provide a reasonable expectation of success, because the



binder resin would have been used in connection with a different layer, in a different configuration. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) (Court finding applicant's invention non-obvious because prior art references failed to provide both a suggestion and a reasonable expectation of success of practicing the claimed invention). Furthermore, there is no disclosure in either reference that would have guided a person of ordinary skill in the art to have employed a binder resin in an acquisition layer in particular. There is no disclosure in either reference that would have lead a person of ordinary skill in the art to have made this specific choice and modification. In the presently claimed invention, the acquisition layer comprises fibers and a binder resin, providing a lower density layer to increase absorbent capacity (see page 2, lines 10-14). The inclusion of a binder in this top layer balances the low density of the layer while simultaneously providing the necessary strength and dimensional stability to the absorbent structure (see page 2, lines 35-37). In absence of binder, a higher density layer would be required to maintain the integrity of the layer. Neither Koczab or Yang provide any teaching of this particular modification. Therefore, Koczab and Yang cannot be relied upon to reject any of the present claims as obvious.

Regarding claim 2, the Examiner has erroneously relied on Koczab by stating on page 3 of the March 4, 2004 Final Office Action, "Koczab discloses that the upper fibrous layer is airlaid at column 4, line 8, [and that] the acquisition layer has a lower density than the distribution zone 3, as disclosed in column 4, lines 25-27 and 52-55." Rather, at column 4, lines 25-27 and 52-55, Koczab refers to measurements of basis weight in weight per unit area. Koczab fails to disclose the density gradient across the absorbent layers of the claimed invention.

Thus, the Examiner has relied on teachings of basis weight values, rather than density values, which are measured in weight per unit volume.

In the Advisory Action dated September 14, 2004, the Examiner has acknowledged that Koczab only teaches basis weight values but erroneously concluded that basis weight and density are proportional measurements. For one skilled in the art to calculate density from basis weight values, it would be necessary for Koczab to disclose caliper or thickness values of the various layers. However, Koczab is silent in this regard. If basis weight is measured as grams/cm<sup>2</sup>, and density is measured in grams/cm<sup>3</sup>, it would follow that,

$$\frac{\text{Basis weight}}{\text{Density}} = \frac{\text{g/cm}^2}{\text{g/cm}^3} = (\text{g/cm}^2) (\text{cm}^3/\text{g}) = \text{cm}.$$

At best, Koczab discloses the total density of the entire absorbent article, but not the various layers (4:36). Accordingly, Koczab also fails to teach the density gradient.

Regarding claims 5 and 6, the Examiner erroneously contends that Koczab teaches the sealing of a containment layer to a distribution zone 3 (5:41-43) or a storage layer 12 (5:1-2) of the presently claimed invention. The arguments previously made with respect to Koczab apply to these rejections as well. At best, Koczab generically teaches that the impervious or outer layer 11 is entirely secured to an absorbent pad by adhesive bonding (5:1-3; 5: 31-33). However, Koczab does not specify which of the layers or if specific areas of the layers are attached. As explained in the present specification, the containment layer of the invention cannot be sealed in its entirety to the absorbent structure. The specification states that the “containment layer should retain but not constrain the fibers and SAP particles of the storage layer from swelling in the Z-direction upon liquid absorption” (page 8, lines 33-38). Therefore, the claims require that “the containment layer is sealed to at least one edge of said upper fibrous layer” (see independent

claim 1). In fact, the specification teaches that the containment layer be sealed to the absorbent structure “at desired locations” (page 9, lines 5-22). Therefore, Koczab fails to provide any teaching as to render obvious the present invention.

Regarding claims 7 and 8, Koczab is also silent regarding the composition of the containment layer. The Examiner acknowledges this fact on page 3 of the March 4, 2004 Final Office Action, but goes on to say,

It is well-known in the art to construct a liquid-impermeable backsheet of a thermoplastic film, such as polyethylene or polypropylene, because these materials offer suitable liquid barrier properties. It would therefore be obvious to one of ordinary skill in the art at the time of invention to construct the containment layer of Koczab from a thermoplastic film to provide suitable liquid barrier properties.

The Examiner fails to provide a reference that specifically teaches a containment layer. Rather, the Examiner refers to the outer impervious layer of Koczab and asserts that one skilled in the art would use the impervious backsheet layer of Koczab as interchangeable with a containment layer. However, mere awareness in the art is not sufficient to establish obviousness. *See In re Zurko*, 258 F.3d 1379, 59 USPQ2d 1693 (Fed. Cir. 2001) (Deficiencies of references cannot be saved by appeals to “common sense” and basic knowledge” without any evidentiary support); *see also Micro Chem., Inc. v. Great Plains Chem. Co., Inc.*, 103 F.3d 1538, 41 USPQ2d 1238 (Fed. Cir. 1997) *cert denied*, 521 U.S. 1122, 1244 (1997). (“A determination of obviousness must involve more than indiscriminately combining prior art; a motivation or suggestion to combine must exist.”). Obviousness can only be established where there is some teaching, suggestion or motivation in the prior art that would have led a person of ordinary skill to combine or modify the references. *See In re Napier*, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed. Cir. 1995); *see also In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Koczab

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provides no teaching of a layer that is specially bound to contain specific fiberized material such as fibers and SAP. Rather, Koczab merely teaches that an impervious layer is present to act as an outer layer or cover to an entire structure. There is no teaching in Koczab that such a layer may be used as a containment layer. Absent some teaching or motivation to combine the elements recited in the references, it is improper to predicate a rejection on the mere identification of individual components of the claimed invention. *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (“findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed”). Furthermore, the Examiner uses improper hindsight in the present rejection. *See In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988) (“One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention”); *see also In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998) (“To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness.”).

The Examiner has failed to provide any real evidence as to why one of ordinary skill would be motivated to combine the references. *In re Dembiczak*, 175 F.3d 994, 1000, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) (“This showing [motivation] must be clear and particular, and broad conclusory statements about the teaching of multiple references, standing alone, are not evidence.”).

Claims 1-2 and 5-8 are nonobvious over Koczab in view of Yang. For a claim to be obvious under 35 U.S.C. § 103(a), three criteria must be satisfied: (i) there must be some

suggestion or motivation to combine or modify the cited references, (ii) there must be a reasonable expectation of success of combining or modifying the cited references, and (iii) the combined references must teach each and every limitation of the claimed invention. *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 USPQ2d 1456, 1459 (Fed. Cir. 2000) (internal citations omitted); *see also* MPEP § 2142. The motivation to combine the references may not be found in the applicants' disclosure itself, but rather, must come from one of three sources: (i) the nature of the problem to be solved, (ii) the references themselves, or (iii) the knowledge of those skilled in the art. *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1456 (Fed. Cir. 1998).

In accordance with the above legal principles, claims 1-2 and 5-8 would not have been obvious over Koczab in view of Yang for the following reasons: (1) neither reference teaches or suggests an acquisition layer comprising fibers and binder resin; (2) Koczab fails to teach the density gradient of the claimed invention; and (3) neither reference teaches the composition of the containment layer, and mere awareness in the art of such layers is not sufficient to establish obviousness. *See Micro Chem., Inc. v. Great Plains Chem. Co., Inc.*, 103 F.3d 1538, 41 USPQ2d 1238, (Fed. Cir. 1997).

As noted above, the combined references must teach each and every limitation of the claimed invention. By combining these two references, one skilled in the art would not have arrived at the presently claimed invention. Furthermore, even when combined through the impermissible use of hindsight, the various elements of the cited references cannot be combined in any way to produce the claimed invention. Accordingly, the Examiner has failed to make a

*prima facie* case of obviousness. Reversal of the rejection over Koczab in view of Yang is required.

**B. Koczab, in view of Yang and Hammons, does not render claims 3 and 9 obvious.**

In the Final Office Action, the Examiner rejected claims 3 and 9 under 35 U.S.C. 103(a) as unpatentable over Koczab in view of Yang and Statutory Invention Registration (SIR) No. H1657 (to Hammons). The Examiner erroneously stated that Koczab and Yang teach all aspects of the claimed invention as indicated above with the exception of the composition of the storage layer. The Examiner states that Hammons provided the storage layer composition, thereby rendering claims 3 and 9 obvious.

The arguments previously made with respect to Koczab and Yang apply equally to this rejection as well. Therefore, claims 3 and 9 would not have been obvious over Koczab and Yang. Specifically, Koczab and Yang fail to provide the teaching of binder resin in an acquisition layer and additionally fail to teach the airlaid composition of the storage layer.

Hammons discloses an absorbent article having an acquisition and storage layer, and discloses a storage layer that may be airfelt (8:57). However, this teaching does not provide the missing teaching of Koczab and Yang as previously discussed. Hammons fails to teach or suggest an absorbent article with the specific acquisition and storage layer compositions as presently claimed. The Examiner has also failed to identify any motivation to combine the airfelt feature of Hammons with the structures of Koczab or Yang. Again, there is no disclosure in

either reference that would have lead a person of ordinary skill in the art to have made this specific choice and modification to arrive at the presently claimed invention.

Accordingly, claims 3 and 9 are patentable under 35 U.S.C. §103(a) because Koczab in view of Yang, and in further view of Hammons would not have suggested the claimed invention. Reversal of the rejection is required.

### **CONCLUSION**

The Examiner's proposed combination of Koczab and Yang and further in view of Hammons would not have rendered claims 1-3 and 5-9 obvious. On the contrary, Koczab does not disclose an acquisition layer with binder resin, a density gradient, or the specified containment layer. Yang fails to provide any of these missing teachings. Additionally, Koczab and Yang fail to teach the composition of the storage layer in the claimed invention. Hammons fails to provide this missing teaching. A person of ordinary skill in the art would have found no motivation to combine any of these references to arrive the claimed invention. Accordingly, claims 1-3 and 5-9 are patentable over the prior art.

For the foregoing reasons, the cited prior art references would not have rendered obvious the presently claimed invention. The rejections of claims 1-3 and 5-9 should be reversed by the Board.

Attached as Appendix A is a copy of pending claims 1-3 and 5-9.

Dated: December 7, 2004

Respectfully submitted,

By Sandra Lee

Sandra S. Lee

Registration No.: 51,932

DARBY & DARBY P.C.

P.O. Box 5257

New York, New York 10150-5257

(212) 527-7700

(212) 753-6237 (Fax)

Attorneys/Agents For Applicant



**APPENDIX A****Claims at Issue on Appeal**

1. (Rejected) A unitary absorbent structure, comprising:  
  
an upper fibrous layer having a liquid acquisition zone extending to one surface and a liquid distribution zone extending to another surface, the acquisition zone comprising fibers and a binder resin;  
  
a lower fibrous liquid storage layer in liquid communication with the liquid distribution zone surface of said upper fibrous layer, said storage layer including superabsorbent polymer particles; and  
  
a containment layer surrounding the storage layer and extending to outer edges of said structure, said containment layer containing fibers and superabsorbent polymer particles of said storage layer against a distribution zone surface of the upper layer, and wherein the containment layer is sealed to at least one edge of said upper fibrous layer.
2. (Rejected) The structure of claim 1 wherein said upper fibrous layer is airlaid and the acquisition zone has a lower density than the distribution zone.
3. (Rejected) The structure of claim 1 wherein said lower storage layer is an airfelt layer.
4. (Cancelled).

5. (Rejected) The structure of claim 1 wherein said containment layer is sealed directly to the distribution zone surface of said upper fibrous layer.

6. (Rejected) The structure of claim 1 wherein said containment layer is sealed directly to the storage layer.

7. (Rejected) The structure of claim 1 wherein said containment layer is selected from the group consisting of thermoplastic film, nonwoven and woven tissue.

8. (Rejected) The structure of claim 1 wherein said containment layer comprises thermoplastic film selected from the group consisting of polyethylene and polypropylene.

9. (Rejected) The structure of claim 3 wherein said airfelt layer is lightly bonded.